

Accommodations Toolkit

Signed Administration: Research



This fact sheet on **signed administration** is part of the *Accommodations Toolkit* published by the National Center on Educational Outcomes (NCEO). It summarizes information and research findings on signed administration as an accommodation.^[1] This toolkit also contains a summary of states' accessibility policies for signed administration ([/nceo/accommodations-toolkit/signed-administration-policies](https://nceo/accommodations-toolkit/signed-administration-policies)).



What is signed administration? Signed administration is an accommodation where test directions or test questions/items are interpreted between spoken and sign language (e.g., American sign language – ASL) or other signed communication system (e.g., Signed Exact English – SEE) or translated from text into a sign language or other signed communication system (Cawthon, 2008, 2011). Translation is often provided by an in-person human interpreter (Cawthon, 2008, 2011; Russell et al., 2009), though it may be provided by a video (e.g., DVD, online platform) with a human interpreter (Higgins et al., 2016; Maihoff et al., 2000; Wang et al., 2017). Signed

administration is often provided using ASL or Signed Exact English (SEE). ASL is commonly used by the deaf community in the United States and has a distinct language system based on English. Another signing system is SEE which employs the same grammatical rules as spoken English but uses hand gestures to represent words.

What are the research findings on who should use this accommodation? Research has shown that students who benefit from using signed administration on assessments are deaf or hard of hearing. It is useful for this population across all grade levels (Cawthon, 2011; Wang et al., 2017).

What are the research findings on the implementation of signed administration? Three studies were located that addressed implementation of the signed administration accommodation.

- A study of students who were deaf or hard of hearing in elementary through high school grades compared the use of computer-based high quality ASL videos for mathematics and English language arts tests to those without the accommodation. The results showed that ASL access with this accommodation had a positive impact on student performance (Higgins et al., 2016). One study of secondary students who communicated in ASL compared computer-based signed administration of a mathematics assessment via a human video to signed administration via a signing avatar on a mathematics test. There was no difference in test performance between the human video of signed administration and the signing avatar (Russell et al., 2009).
- Another study with secondary students who were deaf or hard of hearing compared sign-only administration to simultaneous sign and speech presentation for a reading assessment. Students were able to recall more information from the sign-only form of presentation. The author hypothesized that the students were able to recall more from the sign-only presentation because simultaneous speech and sign presentation may have compromised comprehension by competing for limited attentional resources (Wang et al., 2017).

What perceptions do students and teachers have about signed administration? Six studies addressed the perceptions of students or educators regarding signed administration.

- One study (Maihoff et al., 2000) examined the perceptions of test administrators regarding signing of a math test using a DVD with human interpreter as compared to in-person signing by a teacher. Test administrators reported that signing of the test on the DVD was clearer and a better presentation than having teachers sign to students.
- Three studies examined student perceptions on signed administration. There were mixed findings across the studies. Russell et al. (2009) found that most secondary students preferred a video that contained a human signing the test over a signing avatar in a mathematics test. All students indicated it was easier to take a test that was signed-administered on the computer regardless of format, though the study found there was no actual difference in students' performance between the two formats. Maihoff et al., (2000) reported that students who were deaf or hard of hearing perceived a signed mathematics test to be easier to understand than the written paper only test. However, some students still preferred the paper test because it took less time to take. Higgins et al., (2016) conducted a study of students who were deaf or hard of hearing in elementary through high school grades. The study examined students' perceptions of embedded ASL video support, which allowed English text and ASL to be presented simultaneously compared to a video with fingerspelling (i.e., individual letters of an English word or term are manually spelled) for mathematics and English language arts

tests. The majority of students preferred videos of ASL signed by a human over no provision or ASL. The students reported this mirrored how instruction was presented in their classroom. Alternatively, students reported that they preferred ASL in combination with fingerspelling over the use of fingerspelling alone.

- Three studies investigated teacher perceptions on signed administration. One study found that teachers believed signed administration required more time than a standard administration of a test and that district and building testing schedules did not make allowances for this need (Johnson et al., 2001). A second study found that teachers frequently used ASL for math or reading tests with students across grade levels (Cawthon, 2008). Teachers reported that professional development was important to help ensure that test directions and items were translated using ASL without changing the test content. The third study (Cawthon, 2011) compared the perceptions of teachers who instructed students who were deaf or hard of hearing in math with the perceptions of teachers who instructed these students in reading regarding the usefulness of sign language interpretation for math and reading assessments. The teachers served students who were deaf or hard of hearing in different grade levels. The study found that teachers were more likely to recommend sign interpretation for math assessments than for reading assessments.

What have we learned overall? The research on the effect of signed administration on performance is limited but suggests that the signed administration accommodation is beneficial. Research findings also found no difference in performance between the provision of this accommodation via video-taped human interpretation and interpretation using an avatar—though students preferred the human interpretation. Research findings also suggest that students may do better with a signed only presentation than when signed and oral presentation are combined.

Several studies examined perceptions. Educators had mixed preferences for formats based on time efficiency, the type of content assessed, student skill levels, and self-capacity to provide quality signing. The findings suggested that educators needed professional development to enable them to more confidently select and implement the signed administration accommodation and any other accommodations that might be bundled with it (e.g., extended time). Similar to educators, students had mixed preferences regarding different formats and modes of signed administration in terms of ease and efficiency.

Additional studies are needed to compare performance of students who are deaf or hard of hearing with and without the signed administration accommodations across all grades. There is also a need for additional studies that compare various methods of providing this accommodation (e.g., in-person sign language interpretation as compared to videos of humans or avatars, etc.) especially at the elementary grades, for content assessments other than math or reading (e.g., science, social studies), and for students with disabilities other than deaf or hard of hearing (e.g., autism) who may benefit from different types of signed administration.

Footnotes

► [1]

Research on signed administration summarized here is also available in NCEO's searchable *Accommodations for Students with Disabilities Bibliography* (<https://nceo.info/Resources/bibliographies>) and in NCEO syntheses of research from 1999 through 2018 (see summaries for: 1999–2001  (<https://nceo.umn.edu/docs/OnlinePubs/TechReport34.pdf>), 2002–2004  (<https://nceo.umn.edu/docs/OnlinePubs/Tech45/Technical45.pdf>), 2005–2006  (<https://nceo.umn.edu/docs/OnlinePubs/Tech47/TechReport47.pdf>), 2007–2008  (<https://nceo.umn.edu/docs/OnlinePubs/Tech56/TechnicalReport56.pdf>), 2009–2010  (<https://nceo.umn.edu/docs/OnlinePubs/Tech65/TechnicalReport65.pdf>), 2011–2012  (<https://nceo.umn.edu/docs/OnlinePubs/Synthesis94/Synthesis94.pdf>), 2013–2014  (<https://nceo.umn.edu/docs/OnlinePubs/Report402/NCEOReport402.pdf>), 2015–2016  (<https://nceo.umn.edu/docs/OnlinePubs/NCEOReport412.pdf>), 2017  (<https://nceo.umn.edu/docs/OnlinePubs/NCEOReport418.pdf>), 2018  (<https://nceo.umn.edu/docs/OnlinePubs/NCEOReport423.pdf>), 2019  (<https://nceo.umn.edu/docs/OnlinePubs/NCEOReport433.pdf>). See the reports and online bibliography for additional information about the criteria used to identify studies included in this fact sheet.

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